

2/5/2 (Item 2 from file: 8)

02722775 E.I. Monthly No: EI8903028916

Title: Multiservice on-board switching for mobile satellite communications.

Author: Bella, L.

Corporate Source: ESA

Conference Title: IEEE International Conference on Communications '88: Digital Technology - Spanning the Universe.

Conference Location: Philadelphia, PA, USA Conference Date: 1988 Jun 12-15

Sponsor: IEEE Communications Soc, New York, NY, USA; IEEE, Philadelphia Section, Philadelphia, PA, USA

E.I. Conference No.: 11865

Source: Conference Record - International Conference on Communications. Publ by IEEE, New York, NY, USA.. Available from IEEE Service Cent (cat n 88CH2538-7) Piscataway, NJ, USA. p 521-525

Publication Year: 1988

CODEN: CICC DV

Language: English

Document Type: PA; (Conference Paper) Treatment: T; (Theoretical) Journal Announcement: 8903

Abstract: Future satellites for mobile communications will be required to interface ground ISDN (integrated services digital network) and to provide services and performances comparable with those offered by cellular radio networks. Onboard processing is a key technique to satisfy these

requirements and can provide efficient integration with fixed satellite services. The European Space Agency (ESA) has started the development of a laboratory prototype of the baseband elements of a mobile satellite system, including the onboard processor and the mobile terminals. The prototype will handle several services (voice, circuit, and packet data) and will be compatible not only with laboratory testing, but also with in-field experiments through double-hops via existing transparent satellite. The network requirements and system architecture aspects are reviewed, the relevant access and synchronization techniques are outlined, and the processor structure and operation are described. 5 Refs.

Descriptors: *SWITCHING SYSTEMS--*Space Applications; TELECOMMUNICATION SYSTEMS, MOBILE; TELECOMMUNICATION LINKS, SATELLITE; DIGITAL COMMUNICATION SYSTEMS--Voice/Data Integrated Services

Identifiers: ON-BOARD SWITCHING; EUROPEAN SPACE AGENCY

Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 655 (Spacecraft) 71 (ELECTRONICS & COMMUNICATIONS); 65 (AEROSPACE ENGINEERING)

2/5/3 (Item 3 from file: 8)
 02279439 E.I. Monthly No: EIM8710-068618
 Title: HIGH SPEED DIGITAL SATELLITE SWITCHING NETWORK WITHOUT
 RANDOM ACCESS MEMORY.
 Author: Arita, Takemi; Suzuki, Shigefusa; Ishino, Fukuya
 Corporate Source: NTT, Jpn
 Conference Title: Telecommunication Switching: State of the Art Impact on Networks and
 Services, Proceedings of the International Switching Symposium. Part 2.
 Conference Location: Florence, Italy Conference Date: 1984 May 7-11 E.I. Conference
 No.: 09836
 Source: v 2. Publ by North-Holland, Amsterdam, Neth and New York, NY, USA Pap 41. C.
 4, 7p
 Publication Year: 1984
 ISBN: 0-444-87500-X
 Language: English
 Document Type: PA; (Conference Paper)
 Journal Announcement: 8710
 Abstract: In future digital communication satellites, on-board switching facilities are expected
 to realize various useful communication services. This paper proposes a new structure for the
 general purpose digital switching LSI circuit, which can be applied to an on-board baseband
 switch for future communication satellites. This LSI circuit performs high speed digital switching
 function without Random Access Memories (RAMs). This paper shows the principle of the new
 switching circuit and describes the on-board baseband switch configuration. Based on the multi-
 purpose capability of the switching LSI, many applications applied in a Private Branch Exchange
 (PBX), a Local Area Network (LAN), etc. are presented. (Edited author abstract) 9 refs.
 Descriptors: *TELECOMMUNICATION LINKS, SATELLITE--*Switching;
 COMMUNICATION SATELLITES; DIGITAL COMMUNICATION SYSTEMS
 Identifiers: PBX; DIGITAL COMMUNICATION SATELLITES; ON-BOARD SWITCHING;
 SATELLITE SWITCHING NETWORK; BASEBAND SWITCH; HIGH SPEED DIGITAL
 SWITCHING Classification Codes: 718 (Telephone & Line Communications); 716 (Radar,
 Radio & TV Electronic Equipment); 717 (Electro-Optical
 Communications); 655 (Spacecraft)
 71 (ELECTRONICS & COMMUNICATIONS); 65 (AEROSPACE ENGINEERING)

2/5/4 (Item 4 from file: 8)

02231080 E.I. Monthly No: EIM8702-012681

Title: TECHNOLOGY ACHIEVEMENTS AND PROJECTIONS FOR
COMMUNICATION SATELLITES OF THE FUTURE.

Author: Bagwell, James W.

Corporate Source: NASA, Lewis Research Cent, Cleveland, OH, USA

Conference Title: Collection of Technical Papers - AIAA 11th Communication
Satellite Systems Conference.

Conference Location: San Diego, CA, USA Conference Date: 1986 Mar 17-20 Sponsor:
AIAA, New York, NY, USA; Inst of Electronics & Communications Engineers of Japan, Jpn;
Deutsche Gesellschaft fuer Luft- und Raumfahrt eV, Cologne, West Ger; Assoc Aeronautique
et Astronautique de France, Paris, Fr ; CASI, Ottawa, Ont, Can

E.I. Conference No.: 08179

Source: AIAA Paper Publ by AIAA (CP 862), New York, NY, USA p 289-297 Publication
Year: 1986

CODEN: AAPRAQ ISSN: 0146-3705

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8702

Abstract: NASA's program in communication satellites began early in the nation's space
program. Every major advance in satellite operation has been preceded by a significant
technology development by NASA. Having had its communications R&D program reduced to
a low ebb for approximately five years during the latter part of the 1970's, NASA now finds
itself again making major advances in communication satellite technology. The
capabilities these advances have enabled to date are impressive, but the prospect for the future
is even brighter. The possibilities are just hinted at in NASA's current and planned activities.
The future undoubtedly holds many things yet unforeseen and unimagined. The technology
advances required are realizable, but attention must be given to identification of the most
promising and affordable ideas. 5 refs.

Descriptors: *COMMUNICATIONSATELLITES--*Research; SPACEFLIGHT--UnitedStates

Identifiers: NASA PROGRAM; RECEIVERS; HIGH POWER AMPLIFIERS; MULTIBEAM
ANTENNA; ON-BOARD SWITCHING

Classification Codes: 655 (Spacecraft); 912 (Industrial Engineering & Management)

65 (AEROSPACE ENGINEERING); 91 (ENGINEERING MANAGEMENT)

2/5/5 (Item 5 from file: 8)
01671564 E.I. Monthly No: EIM8407-059251
Title: MINIMIZING THE NUMBER OF SWITCHINGS IN AN SS/TDMA SYSTEM.
Author: Gopal, Inder; Wong, C. K.
Corporate Source: IBM, Thomas J. Watson Research Cent, Yorktown Heights, NY, USA
Conference Title: Satellites et Teleinformatique, Symposium International.
Conference Location: Versailles, Fr Conference Date: 1983 Apr 27-29 Sponsor: IFIP-TC
6, Geneva, Switz; Assoc Francaise pour la Cybernetique Economique et Technique, Paris, Fr;
Soc des Electriciens des Electroniciens et des Radioelectriciens, Paris, Fr
E.I. Conference No.: 03873
Source: Publ by Inst Natl de Recherche en Informatique et en Automatique, Rocquencourt, Fr
p 159-173
Publication Year: 1983
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8407
Descriptors: *SWITCHING THEORY--*Minimization of Switching Nets
Identifiers: DIGITAL COMMUNICATION SYSTEMS; TIME DIVISION MULTIPLE
ACCESS (TDMA); MULTIBEAM SATELLITE SYSTEM; RANDOMLY GENERATED
TRAFFIC PATTERNS; ON-BOARD SWITCHING; HEURISTIC ALGORITHMS; UPLINK
AND DOWN-LINK BEAMS; BIPARTITE GRAPH REPRESENTATION; MINIMUM
NUMBER OF SWITCHINGS; MINIMUM TRANSMISSION TIME
Classification Codes: 721 (Computer Circuits & Logic Elements); 655 (Spacecraft); 716
(Radar, Radio & TV Electronic Equipment); 921 (Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 65 (AEROSPACE ENGINEERING); 71
(ELECTRONICS & COMMUNICATIONS); 92 (ENGINEERING MATHEMATICS)

2/5/6 (Item 6 from file: 8)

01438794 E.I. Monthly No: EIM8308-060503

Title: CONCEPT FOR ADVANCED SATELLITE COMMUNICATIONS AND REQUIRED TECHNOLOGIES.

Author: Ramler, James R.; Salzman, Jack A.

Corporate Source: NASA, Lewis Research Cent, Cleveland, Ohio, USA Conference Title: Conference Record - National Telesystems Conference, NTC '82: Systems for the Eighties.

Conference Location: Galveston, Tex, USA Conference Date: 1982 Nov 7-10 Sponsor: IEEE, Houston Section, Houston, Tex, USA; IEEE Aerospace & Electronics Systems Soc, New York, NY, USA; IEEE, Galveston Bay Section, Tex, USA

E.I. Conference No.: 02003

Source: Publ by IEEE, New York, NY, USA. Available from IEEE Service Cent (Cat n 82CH1824-2), Piscataway, NJ, USA p A2. 1. 1-A2. 1. 5

Publication Year: 1982

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8308

Descriptors: *COMMUNICATION SATELLITES

Identifiers: ADVANCED COMMUNICATIONS TECHNOLOGY SATELLITE (ACTS); USE OF HIGHER FREQUENCY BANDS; MULTIPLE BEAM SPACECRAFT ANTENNAS; 30/20 GHZ OPERATIONAL SYSTEM CONCEPT; ON-BOARD SWITCHING; RF SUBSYSTEMS

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment) 65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

2/5/7 (Item 7 from file: 8)
01272883 E.I. Monthly No: EIM8301-005977
Title: OVERVIEW OF SATELLITE TRANSMISSION TECHNIQUES.
Author: Bargellini, P. L.; Campanella, S. J.
Corporate Source: COMSAT, USA
Conference Title: Innovations in Telecommunications.
Conference Location: Kuwait Conference Date: 1981 Apr
Sponsor: Kuwait Found for the Adv of Sci
E.I. Conference No.: 01381
Source: Pt B. Publ by Acad Press, New York, NY, USA and London, Engl p 565-602
Publication Year: 1982
ISBN: 0-12-467402-X
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8301
Descriptors: *TELECOMMUNICATION LINKS, SATELLITE--*Reviews
Identifiers: SATELLITE TRANSMISSION TECHNIQUES; SATELLITE COMMUNICATION
SYSTEMS; UP-AND-DOWN LINKS; MULTIPLE ACCESS MODES; FREQUENCY REUSE
TECHNIQUES; INTERSATELLITE LINKS; ON BOARD SWITCHING; SWITCHING AT
BASEBAND ; SPACE COMMUNICATION; SATELLITE ANTENNAS
Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 655 (Spacecraft)
71 (ELECTRONICS & COMMUNICATIONS); 65 (AEROSPACE ENGINEERING)

2/5/8 (Item 8 from file: 8)

01246701 E.I. Monthly No: EIM8210-040257

Title: INTEGRATION OF A SATELLITE SWITCHED SYSTEM WITH THE TERRESTRIAL NETWORK.

Author: Preti, R.; De Padova, S.; Puccio, A.

Corporate Source: Cent Studi e Lab Telecomun, Torino, Italy

Conference Title: Proceedings - International Switching Symposium. Conference Location: Montreal, Que, Can Conference Date: 1981 Sep 21-25 Sponsor: IEEE Reg 7, Thornhill, Ont, Can; Can Soc of Electr Eng, Montreal, Que; Can Telecommun Carriers Assoc, Ottawa, Ont

E.I. Conference No.: 00796

Source: v 4. Available from IEEE Serv Cent (Cat n 81CH1736-8), Piscataway, NJ, USA Sess 43C, Pap 4, 9 p

Publication Year: 1981

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8210

Descriptors: *TELECOMUNICATION SYSTEMS, SATELLITE RELAY--*Switching
Identifiers: SATELLITE SWITCHED SYSTEMS; TERRESTRIAL NETWORKS; SATELLITE COMMUNICATIONS; TRANSMISSION CAPACITY; NETWORK INTEGRATION; EARTH STATIONS; BUFFER MEMORIES; ON-BOARD SWITCHING; MICROWAVE SWITCHING

Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 717 (Electro-Optical Communications); 718 (Telephone & Line Communications); 655 (Spacecraft); 723 (Computer Software)

71 (ELECTRONICS & COMMUNICATIONS); 65 (AEROSPACE ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

2/5/9 (Item 1 from file: 2)

04102403 INSPEC Abstract Number: B9204-6250G-026

Title: Fast packet based on-board switching for advanced business services Author(s): Garland, P.J.; Irani, S.; Inukai, T.

Conference Title: Proceedings of the Second European Conference on Satellite Communications. ECSC-2 (ESA SP-332) p.127-36

Publisher: ESA, Noordwijk, Netherlands

Publication Date: 1991 Country of Publication: Netherlands xxxii+533 pp.

Conference Sponsor: EUREL; ESA; SITEL; Comm. Eur. Communities

Conference Date: 22-24 Oct. 1991 Conference Location: Liege, Belgium Language: English Document Type: Conference Paper (PA)

Treatment: General, Review (G)

Abstract: Candidate architectures for future business applications will be based on hybrid circuit/packet switches or advanced fast packet switches. These will be combined with suitable network management and congestion control techniques to ensure proper availability and delay characteristics for delay sensitive traffic. These techniques offer a more flexible approach to the handling of a diverse services mix, but require greater autonomous operation of the on-board switching payload. The authors review some of the features and applications of private business networks and describe a fast packet technique which a Spar Aerospace led study team developed in support of a Canadian demonstration mission that could be hosted on an operational ANIK spacecraft in the mid-1990s. (15 Refs) Descriptors: electronic switching systems; packet switching; satellite relay systems

Identifiers: satellite relay systems; on-board switching; advanced business services; hybrid circuit/packet switches; advanced fast packet switches; private business networks; Spar Aerospace; Canadian demonstration mission; ANIK spacecraft

Class Codes: B6250G (Satellite relay systems); B6150C (Switching theory); B6230 (Switching centres and equipment)

2/5/10 (Item 2 from file: 2)

04102386 INSPEC Abstract Number: B9204-6210M-032

Title: Integration of satellites in the ATM-based IBC network

Author(s): Mossinger, U.

Author Affiliation: ANT Nachrichtentech., Backnang, Germany

Conference Title: Proceedings of the Second European Conference on Satellite Communications. ECSC-2 (ESA SP-332) p.3-7

Publisher: ESA, Noordwijk, Netherlands

Publication Date: 1991 Country of Publication: Netherlands xxxii+533 pp.

Conference Sponsor: EUREL; ESA; SITEL; Comm. Eur. Communities

Conference Date: 22-24 Oct. 1991 Conference Location: Liege, Belgium Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: It is proposed to make satellites an integral part of integrated broadband communication networks. For the description of the network a reference configuration is introduced. The author analyzes how the specific features of a satellite system can meet the requirements of an ATM based network. The impacts of ATM on the access to the satellite ('medium access'), the uplink and downlink capacity management, the protocols, and the payload are described and different possibilities of adaptation are discussed. In order to achieve maximum flexibility of the satellite network on-board switching is considered. The concept of the distributed memory switch (DMS) as a possible solution for the on-board ATM switch is described, and possible alternatives for the required control of the switching functions are compared. (0 Refs)

Descriptors: broadband networks; electronic switching systems; ISDN; protocols; satellite relay systems; time division multiplexing

Identifiers: satellite medium access; uplink capacity; IBCN; asynchronous transfer mode; B-ISDN; integrated broadband communication networks; reference configuration; satellite system; ATM based network; downlink capacity management; protocols; satellite network; on-board switching; distributed memory switch; on-board ATM switch

Class Codes: B6210M (ISDN); B6250G (Satellite relay systems)

2/5/11 (Item 3 from file: 2)

03500161 INSPEC Abstract Number: B89079644

Title: Criteria for approval of mining equipment incorporating on-board switching of high-voltage circuits

Author(s): Boring, C.M.; Porter, K.J.

Author Affiliation: US Dept. of Labor, Mine Safety & Health Adm., Triadelphia, WV, USA

Journal: IEEE Transactions on Industry Applications vol.25, no.4 p. 676-82

Publication Date: July-Aug. 1989 Country of Publication: USA

CODEN: ITIACR ISSN: 0093-9994

U.S. Copyright Clearance Center Code: 0093-9994/89/0700-0676\$01.00 Language: English

Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The US Mine Safety and Health Administration (MSHA) recently developed criteria to modify the current regulation prohibiting the on-board switching of high-voltage circuits (>1000 V AC). Extensive research conducted by the US Bureau of Mines and MSHA provided the basis for the development of safe and viable criteria. Under the provisions of Title 30 Code of Federal Regulations, Section 18.82, experimental permits were issued to high-voltage continuous miners and longwall systems incorporating this new technology. The information gathered from the operation of this equipment in the field along with industry concerns and recommendations were considered during the finalization of these criteria. (4 Refs)

Descriptors: mining; power apparatus; safety; standards; switching Identifiers: safety; USA; standards; power apparatus; mining equipment; on-board switching; high-voltage circuits; research; longwall systems Class Codes: B8699 (Other industries); B8300 (Power apparatus and electric machines); B0160 (Plant engineering, maintenance and safety)

2/5/12 (Item 4 from file: 2)
02391751 INSPEC Abstract Number: B85014173
Title: Satellite communications networks
Author(s): Campanella, S.J.; Harrington, J.V.
Author Affiliation: COMSAT Labs., Clarksburg, MD, USA
Journal: Proceedings of the IEEE vol.72, no.11 p.1506-19
Publication Date: Nov. 1984 Country of Publication: USA
CODEN: IEEPAD ISSN: 0018-9219
U.S. Copyright Clearance Center Code: 0018-9219/84/1100-1506\$01.00 Language: English
Document Type: Journal Paper (JP)
Treatment: General, Review (G)
Abstract: The evolution of satellite communication systems over the past two decades from simple point-to-point links with unique subcarrier-defined paths between points to today's multipoint satellite-switched, multi-satellite networks tying together hundreds of earth stations, and transmitting voice and data increasingly in the time domain is considered. Examples of the methods used to manage network resources efficiently through terrestrial control and monitoring of information flow together with on-board switching are given. These examples are chosen mostly from the INTELSAT experience which will soon include a sixth generation of space segment. The authors conclude with a discussion of the future directions of satellite network development made possible by the technology being planned for NASA's Advanced Communications Technology Satellite. This design anticipates the needs of both high-volume trunking and thin-route service. (17 Refs)
Descriptors: multi-access systems; reviews; satellite relay systems; telecommunication networks
Identifiers: ACTS; demand-assigned networks; TDMA; review;
satellite-switched networks; multi-access systems; satellite communication systems; on-board switching; INTELSAT; Advanced Communications Technology Satellite
Class Codes: B6250G (Satellite relay systems)

2/5/13 (Item 5 from file: 2)
01709125 INSPEC Abstract Number: B81033962
Title: Applications of combinatorial sets in satellite communications Author(s): Wu, W.W.
Conference Title: 1981 IEEE International Symposium on Information Theory. Abstracts of Papers p.64
Publisher: IEEE, New York, NY, USA
Publication Date: 1981 Country of Publication: USA 152 pp. Conference Sponsor: IEEE; Union Radio Sci. Int
Conference Date: 9-12 Feb. 1981 Conference Location: Santa Monica, CA, USA
Language: English Document Type: Conference Paper (PA)
Treatment: Applications (A); Theoretical (T)
Abstract: Demonstrates how a class of simple combinatory set theory has not only touched upon diversified satellite communication system disciplines, but also very often provided the optimum solution. The author addresses the following specific applications: the elimination of intermodulation product in FDMA through frequency selection; the generation of synchronizable sequence with prescribed correlation properties in TDMA; the minimization of message collision in superpacket satellite data transmission; the optimal arrangement in pairwise network connection for on-board switching; sub-Nyquist temporal sampling for whitening the aliasing effects for high-speed signal processing; sidelobe control in multi-beam antenna arrays; the generation of distinct signatures for interference identifications and random multiple-access transmission. Each application is demonstrated by a simple example.
(0 Refs)
Descriptors: combinatorial mathematics; satellite relay systems; set theory
Identifiers: combinatorial sets; satellite communication system; intermodulation product; FDMA; TDMA; message collision; superpacket satellite data transmission; pairwise network connection; on-board switching; high-speed signal processing; multi-beam antenna arrays; random multiple-access transmission; sub-Nyquist temporal sampling; sidelobe control
Class Codes: B0250 (Combinatorial mathematics); B6150 (Communication switching theory); B6250G (Satellite relay systems)

CUCCIA, C. LOUIS

1/5/1

02313984 E.I. Monthly No: EI8709095431

Title: EVOLUTION OF THE GEOSTATIONARY PLATFORM CONCEPT.

Author: Edelson, Burton I.; Lovell, Robert R.; Cuccia, C. Louis

Corporate Source: NASA, Washington, DC, USA

Source: IEEE Journal on Selected Areas in Communications v SAC-5 n 4 May 1987 p 601-614

Publication Year: 1987

CODEN: ISACEM ISSN: 0733-8716

Language: ENGLISH

Document Type: JA; (Journal Article) Treatment: A; (Applications); G; (General Review)

Journal Announcement: 8709

Abstract: Geostationary platforms were originally conceived as an efficient means of increasing the capacity at a point in the geostationary orbital arc. The geostationary platform was seen as a solution to the predicted crowding of the orbital arc since it could provide the functions of many individual satellite of conventional design. Also, geostationary platforms have been suggested for mounting very large antennas as will be required for mobile communications, or high-power sources as will be required for broadcast services to small terminals. More recently these large satellite platforms were also envisioned as including earth observation and other science payloads. The advent of the US Space Station, which can provide a staging base for platform assembly and testing in space at low earth orbit, prior to launch to geostationary earth orbit, will introduce a dimension to practical platform design. This dimension has reintroduced the geostationary platform concept as a potential communications and science spacecraft of the post-IOC-Space Station family. The evolution of concepts for geostationary platforms over the last decade, based on both communications- and science-user scenarios developed worldwide, is described. 36 refs.

Descriptors: *SPACEPLATFORMS; SPACECRAFT; TELECOMMUNICATIONSYSTEMS, MOBILE

Identifiers: GEOSTATIONARY PLATFORM; SPACE STATION

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment); 717 (Electro-Optical Communications)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/2

02233995 E.I. Monthly No: EIM8703-016375

Title: EVOLUTION OF LARGE SPACE ANTENNAS.

Author: Cuccia, C. Louis

Corporate Source: NASA, Washington, DC, USA

Conference Title: AP-S International Symposium 1986: 1986 International Symposium Digest
- Antennas and Propagation.

Conference Location: Philadelphia, PA, USA Conference Date: 1986 Jun 8-13

Sponsor: IEEE Antennas & Propagation Soc, New York, NY, USA

E.I. Conference No.: 09096

Source: AP-S International Symposium (Digest) (IEEE Antennas and Propagation Society) 1986 Publ by IEEE, New York, NY, USA. Available from IEEE Service Cent (Cat n 86CH2325-9), Piscataway, NJ, USA p 401-403 Publication Year: 1986

CODEN: IAPSBG ISSN: 0272-4693

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8703

Abstract: After a brief review of the structure of the present generation of communications satellites, the author presents an overview of the technology of large space reflector antennas. The uses and benefits of large space antennas are enumerated and briefly described.

Descriptors: *ANTENNAS--*Reflectors; COMMUNICATION SATELLITES--Components
Identifiers: LARGE SPACE REFLECTOR ANTENNAS; UNFURLABLE SPACE ANTENNA;
INTELSAT V; SPACE STATION; DIGEST OF PAPER

Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 655 (Spacecraft)
71 (ELECTRONICS & COMMUNICATIONS); 65 (AEROSPACE ENGINEERING)

1/5/3

02109500 E.I. Monthly No: EIM8608-052090

Title: NASA'S COMMUNICATIONS PROGRAMS FOR INTERCONNECTIVITY.

Author: Lovell, Robert R.; Cuccia, C. Louis

Corporate Source: NASA, Washington, DC, USA

Conference Title: IEEE EASCON 85 Proceedings - 18th Annual Electronics and Aerospace Systems Conference: National Space Strategy, A Progress Report.

Conference Location: Washington, DC, USA Conference Date: 1985 Oct 28-30

Sponsor: IEEE Aerospace & Electronics Systems Soc, New York, NY, USA; IEEE, Washington Section, Washington, DC, USA; US Armed Forces Communications & Electronics Assoc, Falls Church, VA, USA; Natl Space Club, Washington, DC, USA

E.I. Conference No.: 08039

Source: EASCON Record: IEEE Electronics and Aerospace Systems Convention 18th 1985. Publ by IEEE, New York, NY, USA. Available from IEEE Service Cent (Cat n 85CH2213-7), Piscataway, NJ, USA p 199-200

Publication Year: 1985

CODEN: ERECDO ISSN: 0531-6863

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8608

Abstract: A status report on the ACTS satellite program, now one year into its design and construction phase, is presented. Included are pertinent satellite details with respect to size, weight, and key design parameters and status of the MCP multi-beam communications payload, and the message routing and traffic management techniques under construction. The high-burst-rate (HBR) designed to operate at 200 Mb/s through fixed spot beams into trunking terminals is also described, and the low-burst-rate (LBR) system designed to access customer premise terminals with scanning antenna beams burst rates of either 110 or 27.5 Mb/s is discussed. The 27.5 Mb/s system is being designed to be accessed by experimenters using micro-earth-terminals. To date, over 80 experimenters have provided letters of intent to use ACTS.

Descriptors: *COMMUNICATION SATELLITES; TELECOMMUNICATION LINKS, SATELLITE

Identifiers: NASA'S COMMUNICATIONS PROGRAM; INTERCONNECTIVITY

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/4

01634242 E.I. Monthly No: EIM8402-018094

Title: TECHNOLOGY CONSIDERATIONS IN EHF SATCOM SYSTEMS.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerospace & Communications Corp, Palo Alto, Calif, USA

Conference Title: ITC/USA/'83, International Telemetry Conference. Conference

Location: San Diego, Calif, USA Conference Date: 1983 Oct 24-27

Sponsor: Int Foundation for Telemetry, Woodland Hills, Calif, USA; ISA, Research Triangle Park, NC, USA

E.I. Conference No.: 03630

Source: International Telemetry Conference (Proceedings) v 19 1983. Publ by ISA, Research Triangle Park, NC, USA p 239-245

Publication Year: 1983

CODEN: ITCOD6 ISBN: 0-87664-791-3

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8402

Descriptors: *COMMUNICATION SATELLITES--*Millimeter Waves

Identifiers: MILITARY MM-WAVE SATCOMS; NASA; TERRESTRIAL RADIO RELAY; COMMUNICATION SATELLITES; MM WAVE SYSTEMS; WAVEGUIDES; SATCOMS; RADIO ASTRONOMY

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment); 717 (Electro-Optical Communications); 404 (Military Engineering)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS); 40 (CIVIL ENGINEERING)

1/5/5

01536806 E.I. Monthly No: EI8407063230 E.I. Yearly No: EI84021014 Title: NEW WAVE OF COMMUNICATION SATELLITES.

Author: Lovell, Robert R.; Cuccia, C. Louis

Corporate Source: NASA, Communications Div, Washington, DC, USA

Source: Aerospace America v 22 n 3 Mar 1984 p 42-45, 48-51

Publication Year: 1984

CODEN: AEAME2

Language: ENGLISH

Journal Announcement: 8407

Abstract: Twenty years after Telstar, satellites now provide telephone, television, data, and business services internationally, regionally, and nationally. The geostationary arc has become crowded at C-band (6/4 GHz) and Ku-band (14/11 GHz), spurring international plans to use it more efficiently. But a host of versatile communication satellites will take to the skies in this decade to add to this crowding. However, use of the 30/20-GHz (Ka) band should relieve these orbital-saturation and resulting interference problems now looming at C-band and Ku-band. The proposed NASA Advanced Communication Technology Satellite - with its electronically hopped antenna beams and on-board signal processing - would enable more efficient use of the spectrum by reuse of frequencies.

Descriptors: *COMMUNICATION SATELLITES; INFORMATION THEORY--Channel Capacity; TELECOMMUNICATION LINKS, SATELLITE--Design

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/6

01272888 E.I. Monthly No: EIM8301-005982

Title: EARTH STATION DEVELOPMENT.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerosp & Commun Corp, USA

Conference Title: Innovations in Telecommunications.

Conference Location: Kuwait Conference Date: 1981 Apr

Sponsor: Kuwait Found for the Adv of Sci

E.I. Conference No.: 01381

Source: Pt B. Publ by Acad Publ by Acad Press, New York, NY, USA and London, Engl
p 749-819

Publication Year: 1982

ISBN: 0-12-467402-X

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8301

Descriptors: *AEROSPACE GROUND SUPPORT

Identifiers: COMMUNICATION SATELLITE EARTH STATIONS; BROADCAST
SATELLITE TERMINAL; ANTENNA SIDELobe CONTROL; ORBITAL UTILIZATION;
COMMUNICATION CAPACITY MAXIMIZATION; SATELLITE TRANSPONDER
CHANNELS; MODEMS; MODULATION TECHNIQUES; EARTH TERMINAL BASEBAND
SYSTEMS; EARTH TERMINAL EQUIPMENT Classification Codes: 656 (Space Flight); 716
(Radar, Radio & TV Electronic Equipment); 718 (Telephone & Line Communications)
65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/7

01265134 E.I. Monthly No: EIM8212-062264

Title: OPTIMUM UTILIZATION OF DOMESTIC COMMUNICATION SATELLITES FOR DATA AND TELEVISION TRANSMISSION.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerosp & Commun Corp, Sunnyvale, Calif, USA Conference Title: Conference Record - IEEE International Conference on Communications: ICC'82, The Digital Revolution.

Conference Location: Philadelphia, Pa, USA Conference Date: 1982 Jun 13-17

Sponsor: IEEE Commun Soc, New York, NY, USA; IEEE Philadelphia Sect, Pa, USA; IEEE Aerosp and Electron Soc, New York, NY, USA; IEEE Geosci and Remote Sens Soc, New York, NY, USA

E.I. Conference No.: 01255

Source: Conference Record - International Conference on Communications v 2. Publ by IEEE, New York, NY, USA. Available from IEEE Serv Cent (Cat n 82CH1766-5), Piscataway, NJ, USA p 4A. 5. 1-4A. 5. 5

Publication Year: 1982

CODEN: CICC DV

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8212

Descriptors: *TELECOMMUNICATION SYSTEMS, SATELLITE RELAY

Identifiers: OPTIMUM UTILIZATION; DOMESTIC COMMUNICATION SATELLITES; DATA TRANSMISSION; TELEVISION TRANSMISSION; SYSTEM CAPACITY; SATELLITE DESIGN; EARTH TERMINAL DESIGN; BANDWIDTH TECHNIQUE; MODULATION TECHNIQUES; MULTIPLE ACCESS TECHNIQUES

Classification Codes: 716 (Radar, Radio & TV Electronic Equipment) 71 (ELECTRONICS & COMMUNICATIONS)

1/5/8

01245739 E.I. Monthly No: EIM8209-039305

Title: DIRECT BROADCAST SATELLITE RECEIVER SYNERGISM WITH THE COMMERCIAL COLOR TV INDUSTRY.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerosp Commun Corp, Sunnyvale, Calif, USA Conference Title: Collection of Technical Papers - AIAA 9th Communications Satellite Systems Conference.

Conference Location: San Diego, Calif, USA Conference Date: 1982 Mar 7-11

Sponsor: AIAA, New York, NY, USA; Inst of Electron & Commun Eng of Jpn, Tokyo; Dtsch Ges fuer Luft und Raumfahrt, Cologne, Ger; Assoc Aeronaut et Astronaut de Fr, Paris; Can Aerounaut and Space Inst, Ottawa, Ont

E.I. Conference No.: 00923

Source: AIAA Paper Publ by AIAA (CP821), New York, NY, USA p 768-773 Publication Year: 1982

CODEN: AAPRAQ

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8209

Descriptors: *TELECOMMUNICATION SYSTEMS, SATELLITE RELAY

Identifiers: DIRECT BROADCAST SATELLITE SYSTEMS; RECEIVER SYNERGISM; COMMERCIAL COLOR TELEVISION; TVRO RECEIVER; MICROPROCESSOR-CONTROLLED RANDOM-ACCESS TUNING CIRCUITS; MONOLITHIC GALLIUM ARSENIDE CIRCUITS; GALLIUM ARSENIDE FIELD EFFECT TRANSISTORS; DIRECT-TO-HOME TVRO TERMINALS Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 714 (Electronic Components); 713 (Electronic Circuits)

71 (ELECTRONICS & COMMUNICATIONS)

1/5/9

01212541 E.I. Monthly No: EIM8207-020691

Title: ENHANCEMENT OF ENDURABILITY BY MODERN TECHNOLOGY IN TRANSPORTABLE MILITARY TT&C GROUND TERMINALS.

Author: Cuccia, C. Louis; Winslow, Roger C.

Corporate Source: Ford Aerosp & Commun Corp, Sunnyvale, Calif, USA Conference Title: International Telemetry Conference, ITC/USA/'81. Conference Location: San Diego, Calif, USA Conference Date: 1981 Oct 13-15

Sponsor: Int Found for Telem, Woodland Hills, Calif, USA; ISA, Research Triangle Park, NC, USA

E.I. Conference No.: 00368

Source: International Telemetry Conference (Proceedings) v 17 1981. Publ by Int Found for Telem, Woodland Hills, Calif, USA. Available from ISA, Research Triangle Park, NC, USA. p 693-698

Publication Year: 1981

CODEN: ITCOD6 ISBN: 0-87664-516-3

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8207

Descriptors: *TELECOMMUNICATION SYSTEMS, SATELLITE RELAY

Identifiers: WORLDWIDE MILITARY COMMAND AND CONTROL SYSTEM; ENDURABILITY ENHANCEMENT; TRANSPORTABLE TT AND C EARTH TERMINALS; DEPLOYMENT; EARTH TERMINAL SENSITIVITY FIGURE OF MERIT G/T; EFFECTIVE ISOTROPIC RADIATED POWER (EIRP); EARTH TERMINAL EIRP OR UP-LINK RADIATED POWER PARAMETER Classification Codes: 716 (Radar, Radio & TV Electronic Equipment) 71 (ELECTRONICS & COMMUNICATIONS)

1/5/10

01212513 E.I. Monthly No: EIM8207-020663

Title: VLSI IN MILITARY COMMUNICATIONS.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerosp & Commun Corp, Sunnyvale, Calif, USA Conference Title: International Telemetry Conference, ITC/USA/'81. Conference Location: San Diego, Calif, USA Conference Date: 1981 Oct 13-15

Sponsor: Int Found for Telem, Woodland Hills, Calif, USA; ISA, Research Triangle Park, NC, USA

E.I. Conference No.: 00368

Source: International Telemetry Conference (Proceedings) v 17 1981. Publ by Int Found for Telem, Woodland Hills, Calif, USA. Available from ISA, Research Triangle Park, NC, USA p 429-433

Publication Year: 1981

CODEN: ITCOD6 ISBN: 0-87664-516-3

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8207

Descriptors: *MILITARY COMMUNICATIONS

Identifiers: VERY LARGE SCALE INTEGRATION; TRI-SERVICE VERY HIGH SPEED INTEGRATED CIRCUIT PROGRAM; ELECTRONIC BATTLEFIELD; COMPUTERS; CONSUMER PRODUCTS; COMMERCIAL COMMUNICATIONS; GALLIUM ARSENIDE VLSI

Classification Codes: 404 (Military Engineering); 713 (Electronic Circuits); 714 (Electronic Components); 716 (Radar, Radio & TV Electronic Equipment); 718 (Telephone & Line Communications); 723 (Computer Software)

40 (CIVIL ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS); 72 (COMPUTERS & DATA PROCESSING)

1/5/11

01212487 E.I. Monthly No: EIM8207-020637

Title: SURVEY OF MODERN INSTRUMENTATION IN AEROSPACE TT&C EARTH TERMINALS.

Author: Cuccia, C. Louis; Steinberg, Philip

Corporate Source: Ford Aerosp & Commun Corp, Sunnyvale, Calif, USA Conference Title: International Telemetry Conference, ITC/USA/'81. Conference Location: San Diego, Calif, USA Conference Date: 1981 Oct 13-15

Sponsor: Int Found for Telem, Woodland Hills, Calif, USA; ISA, Research Triangle Park, NC, USA

E.I. Conference No.: 00368

Source: International Telemetry Conference (Proceedings) v 17 1981. Publ by Int Found for Telem, Woodland Hills, Calif, USA. Available from ISA, Research Triangle Park, NC, USA p 201

Publication Year: 1981

CODEN: ITCOD6 ISBN: 0-87664-516-3

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8207

Descriptors: *AEROSPACE GROUND SUPPORT

Identifiers: INSTRUMENTATION SURVEY; TELEMETRY, TRACKING AND COMMAND; EARTH TERMINALS; INTEGRATED CIRCUITS; LSI TECHNOLOGY; MICROPROCESSORS; COMPUTER GRAPHICS; DISPLAY SYSTEMS; INTERFACE BUSES; ABSTRACT ONLY Classification Codes: 656 (Space Flight); 716 (Radar, Radio & TV Electronic Equipment)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/12

01078745 E.I. Monthly No: EI8112097749 E.I. Yearly No: EI81016082 Title:
**PROJECTION OF THE DEVELOPMENT OF HIGH CAPACITY COMMUNICATIONS
SATELLITES IN THE 1980s.**

Author: Rusch, R. J.; Cuccia, C. Louis

Corporate Source: Ford Aerosp & Commun Corp, Palo Alto, Calif

Source: AIAA Pap Collect of Tech Pap - AIAA Commun Satell Syst Conf, 8th, Orlando, Fla,
Apr 20-24 1980. Publ by AIAA (CP802), New York, NY, 1980 80-0544 p 412-418

Publication Year: 1980

CODEN: AAPRAQ ISSN: 0146-3705

Language: ENGLISH

Journal Announcement: 8112

Abstract: This paper introduces a new approach for providing high satellite capacity. It
distributes the satellite payload between several spacecraft without requiring satellite interlinks,
master control

satellites, or large space structures. The advantages of this approach are explained and compared
with the features of other advanced design
approaches. 9 refs.

Descriptors: *COMMUNICATION SATELLITES--*Design

Classification Codes: 655 (Spacecraft); 716 (Radar, Radio & TV Electronic Equipment)

65 (AEROSPACE ENGINEERING); 71 (ELECTRONICS & COMMUNICATIONS)

1/5/13

00854658 E.I. Monthly No: EI7910077282 E.I. Yearly No: EI79023934 Title: PHASE SYNCHRONIZATION OF DIGITALLY MODULATED BURST CARRIERS IN TDMA SYSTEMS -- A TECHNOLOGY OVERVIEW.

Author: Cuccia, C. Louis

Corporate Source: Ford Aerosp & Commun Corp, Palo Alto, Calif

Source: Dig Tech Pap IEEE MTT-S Int Microwave Symp Orlando, Fla, Apr 30-May 2 1979. Publ by IEEE (79CH1439-9 MTT-S), Piscataway, NJ. 1979 p 519-521

Publication Year: 1979

CODEN: DIMSD4 ISSN: 0149-6298

Language: ENGLISH

Journal Announcement: 7910

Abstract: Time division use of the radio spectrum has created new multiple access techniques involving transmission of bursts of digitally modulated carriers using phase shift keyed modulation. Such systems are known as TDMA and involve burst carriers incorporating data rates from kilobits to gigabits per second. In order for these digitally modulated bursts to be demodulated at a terminal remote from the transmitter or source, it is necessary to provide a means to "recover" carrier frequency and phase from the received burst in order to be able to operate a coherent receiver. This paper discusses the types of carrier burst synchronization techniques now in use, including the use of preambles to each burst which contain modulation by unique bit words which can be used to phase

synchronize the receiver demodulator oscillator on a burst-to-burst basis. It discusses the new microwave techniques of multipliers, tracking filters, anti-hangup resonators, which can be used to accomplish this

synchronization for data rates from 40 Mbps to 1.6 Gbps. The text of this paper is in digest form. 8 refs.

Descriptors: *DIGITAL COMMUNICATION SYSTEMS--*Synchronization; PHASE MODULATION--Phase Shift Keying; INFORMATION THEORY--Digital Signals Identifiers: TIME DIVISION MULTIPLE ACCESS; PHASE SYNCHRONIZATION Classification Codes: 716 (Radar, Radio & TV Electronic Equipment); 731 (Automatic Control Principles) 71 (ELECTRONICS & COMMUNICATIONS); 73 (CONTROL ENGINEERING)